UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Blvd, Suite 1100
Portland OR, 97232

NMFS Tracking No:
WCR-2015-3903

November 8, 2016

Mr. Michael Lidgard
NPDES permit unit
U.S. Environmental Protection Agency
1200 Sixth Ave., Suite 900
Seattle, Washington 98101-3140

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for NPDES Permit (WAG 130000) for Federal Aquaculture Facilities and Aquaculture facilities Located in Indian Country within the Boundaries of the State of Washington

Dear Mr. Lidgard:

On December 21, 2015 NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the U.S. EPA's issuance of NPDES permit WAG 1300 addressing discharges from federal and tribal fish hatcheries is not likely to adversely affect (NLAA) species listed as threatened or endangered or their critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination that you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.[1] Because no adverse effects were identified to EFH from the proposed action, no analysis is provided herein.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). A complete record of this consultation is on file electronically at the Oregon Washington Coastal Office. Consultation was initiated upon the close of the public comment

[1] Memorandum from William T. Hogarth, Acting Administrator for Fisheries, to Regional Administrators (national finding for use of Endangered Species Act section 7 consultation process to complete essential fish habitat consultations) (February 28, 2001).

period on this permit, March 31, 2016, once it was concluded that public comments did not materially alter the substantive elements of analysis for effects to listed species and their designated critical habitats.

Proposed Action and Action Area

EPA proposes to reissue the NPDES general permit to establish conditions for the discharge of pollutants in wastewaters from federal fish hatcheries and from aquaculture facilities in Indian Country, as defined in 18 USC §1151, to waters of the United States within the boundaries of the State of Washington. Receiving waters for permittees under this general permit are waters of the U.S. located in Indian Country and waters of the State of Washington (which are also waters of the U.S.) where federal facilities discharge directly to state waters. Surface waters include lakes, rivers, ponds, streams, inland waters, marine waters, and all other surface waters and water courses (for the purposes of this permit, surface waters do not include hatchery ponds, raceways, pollution abatement ponds, settling basins, or wetlands constructed solely for wastewater treatment). Table 1 below summarizes these facilities, and their receiving waters. Figure 1 depicts their geographic locations. This action is limited to the NPDES general permit, under EPA's Clean Water Act Section 402 authorities. Under this NPDES permit, the EPA has authority over wastewater discharges from permitted facilities. This NPDES permit does not have jurisdiction over issues related to in-stream flow, fish passage, or water withdrawal.

We have not identified any interrelated or interdependent activities. The hatcheries and/or hatchery programs associated with the proposed water discharges permit would be expected to continue but for the proposed permit. Because hatchery programs are not inherently linked to a particular hatchery facility, in the absence of the proposed discharge permit, hatchery programs could relocate to alternate hatchery facilities. Also, there are potential technical alternatives to discharging the water as proposed, e.g., water recirculation. Further, many of the discharges would likely meet state water quality standards given their low concentrations of chemicals

Table 1: Facilities currently covered by WAG130000.

Hatchery Name	Operator	City/Location	Receiving Water
Carson National Fish Hatchery	USFWS	Carson	Wind River
Entiat National Fish Hatchery	USFWS	Entiat	Entiat River
Little White Salmon National Fish Hatchery	USFWS	Cook	Little White Salmon River
Makah National Fish Hatchery	USFWS	Neah Bay	Sooes River
Quinault National Fish Hatchery	USFWS	Humptulips	Cook Creek
Spring Creek National Fish Hatchery	USFWS	Underwood	Columbia River
Willard National Fish Hatchery	USFWS	Cook	Little White Salmon River
Winthrop National Fish Hatchery	USFWS	Winthrop	Methow River
Ford State Fish Hatchery	WDFW	Wellpinit	Chamokane Creek
Salmon River Fish Culture Facility	Quinault Department of Fisheries	Taholah	Salmon River
Tulalip Hatchery	Tulalip Tribes	Tulalip	Tulalip Creek
Upper & Lower Tulalip Creek Ponds	Tulalip Tribes	Tulalip	Tulalip Bay
Battle Creek Pond	Tulalip Tribes	Tulalip	Tulalip Creek, Tulalip Bay

Clear Creek Hatchery	Nisqually Indian Tribe	Olympia	Nisqually River
Colville Tribal Hatchery	Confederated Tribes of the Colville Reservation	Bridgeport	Columbia River
Skookum Creek Fish Hatchery	Lummi Nation Natural Resources	Acme	South Fork Nooksack River
Lummi Bay Fish Hatchery	Lummi Nation Natural Resources	Bellingham	Lummi Bay
Spokane Tribal Hatchery; Permittee is Bonneville Power Association	Spokane Tribe of Indians	Ford	Metamootles/Galbraith Springs
Keta Creek Hatchery Complex	Muckleshoot Indian Tribe - Fisheries Division	Auburn	Crisp Creek
Kickitat Salmon Hatchery; Yakima Nation Fisheries	Yakama Nation Fisheries	Glenwood	Klickitat River
Quilcene National Fish Hatchery	USFWS	Quilcene	Big Quilcene River
House of Salmon; Lower Elwha Fish Hatchery No. 2	Lower Elwha Klallam Tribe	Port Angeles	Elwha River
Chief Joseph Fish Hatchery Program - Omak Acclimation Pond	Confederated Tribes of the Colville Reservation	Omak	Okanogan River
Chief Joseph Fish Hatchery Program - Hatchery on Columbia River	Confederated Tribes of the Colville Reservation	Bridgeport	Columbia River
Saltwater Park Sockeye Hatchery	Tacoma Power	(Yet to be constructed)	So. Hood Canal

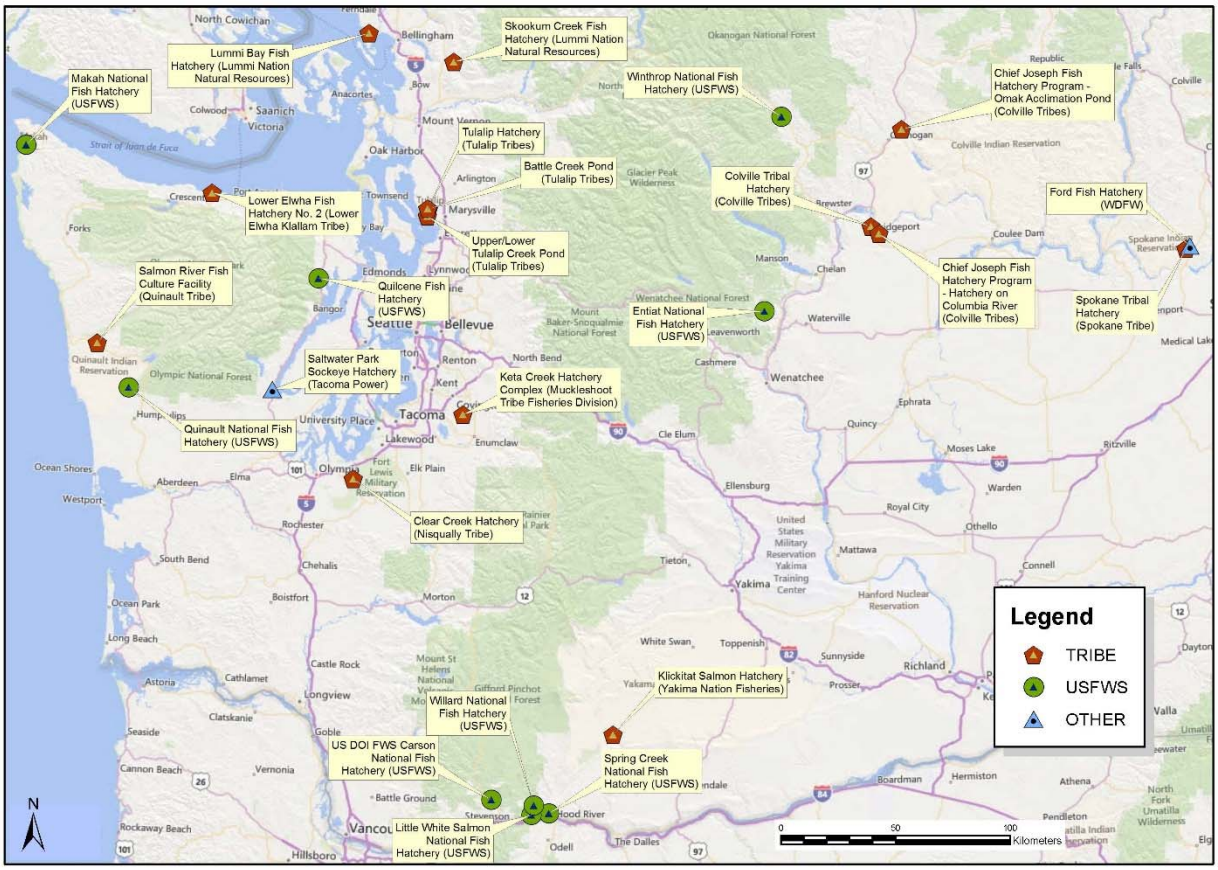

Figure 1. Locations of fish hatcheries that would be covered by the NPDES permit (source EPA)

Not all T&E species are found statewide. Some species have limited distribution within Washington, and those distributions do not overlap portions of the state where hatchery discharges are present. T&E species whose distributions do not overlap areas with hatchery discharges cannot be adversely affected by hatchery releases, again because they are not exposed to hatchery chemicals. Other T&E species, particularly those living in estuarine or marine systems, may only be exposed to releases from one or a few hatcheries. The Quinault National Fish Hatchery, the Quinault Tribe's Salmon River Fish Culture Facility, and the Makah National Fish Hatchery do not discharge into rivers supporting T& E species identified in Table 8. For example, the Spokane Tribal Fish Hatchery and the Ford State Fish Hatchery operated by WDFW do not raise anadromous salmonids and discharge into habitat inaccessible to the T&E species in Table 8, as the current limit of anadromous fish use of the Columbia system is blocked at Chief Joseph Dam, over 100 miles downstream.

Facilities Covered by the General Permit

This General Permit applies only to cold water facilities recognized under 40 CFR 122.24, as 'concentrated aquatic animal production facilities' (CAAPs). The cold water species category of CAAPs includes facilities where animals are produced in ponds, raceways, or other similar

structures that discharge at least 30 days per year but does not include facilities that produce less than approximately 9,090 harvest weight kg (approximately 20,000 lbs) of aquatic animals per year. It also does not include facilities that feed less than 2,272 kg (approximately 5,000 lbs) of food during the calendar month of maximum feeding.

Such facilities will be eligible for coverage under the General Permit regardless of the type of cold water species being reared, type of production system, or whether discharges are to fresh or marine waters provided that the facility operates for at least 30 days per year, holds at least 20,000 pounds of fish at their maximum, and feeds at least 5,000 pounds of feed in the maximum month of feeding. Acclimation ponds need permit coverage if they meet or exceed these thresholds.

Facilities and Discharges Excluded from Coverage with the General Permit

A facility with any of the following types of discharges cannot be covered under this permit and must apply for an individual NPDES permit:

- Discharges from aquaculture facilities that hold less than 20,000 pounds of fish at their maximum or whose month of maximum feeding is less than 5,000 pounds, unless they are designated significant contributors of pollution by the EPA.
- Discharges that do not consist solely of effluent from aquaculture facilities. If a discharge from an aquaculture facility mixes with other wastewater (e.g., domestic wastewater) prior to being discharged, the combined discharge is not covered;
- Discharges from facilities where an NPDES permit has been terminated or denied until the EPA expressly issues an authorization to discharge;
- Discharges that contribute to, or may reasonably be expected to contribute to, a violation of an applicable water quality standard;
- Discharges to impaired waters, designated as such pursuant to Section 303(d) of the CWA, which are water-quality limited for a pollutant of concern evaluated in the development of this permit (BOD5, total suspended solids, settleable solids, nutrients, ammonia, and chlorine), unless a wasteload allocation (WLA) has been given to the facility in a TMDL and is applied in this permit. If a waterbody to which an existing Permittee discharges becomes impaired during the next permit cycle, the Permittee may submit information to the EPA that demonstrates that the discharge is not expected to cause or contribute to an exceedance of water quality standards. Then, the EPA will determine 1) whether the discharge would cause or contribute to an exceedance or impairment, and 2) whether the facility may remain covered under this General Permit in future permit cycles or if an individual permit is needed. New dischargers to impaired waterbodies are not eligible under this General Permit, and must seek permit coverage under an individual permit.
- Discharges from processes not associated with fish hatcheries or farms;

- Discharges from fish hatchery or farm processes where the General Permit does not adequately address the environmental concerns associated with the discharge, as determined by the EPA at the time a discharger seeks coverage under the General Permit;
- Discharges to land or to publicly owned treatment works;
- Discharges to waters that constitute an outstanding national resource, such as waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance;
- Discharges to waters that constitute special resource waters in Indian Country -- waters that comprise a special and/or a unique resource to the Reservation.

Effluent Limitations

During the effective period of the Permittee's authorization to discharge, the Permittee is authorized to discharge pollutants from the outfall(s) specified in its NOI within the limits and subject to the conditions set forth in this permit. This permit authorizes the discharge of only those pollutants resulting from facility processes, waste streams, and operations that have been clearly identified in the NOI, including non-production facilities, such as incubators, laboratories, tagging operations, etc. It does not authorize the discharge of any waste streams, including spills and other unintentional or non-routine discharges of pollutants, that are not part of the normal operation of the facility as disclosed in the Permittee's NOI nor does it authorize the discharge of any pollutants that are not ordinarily present in such waste streams.

Discharge Limits
The Permittee must limit discharges from all outfalls authorized under this permit as specified in Tables 2 and 3, below, as applicable. The limits in Table 2 apply to all hatchery discharges except those from separate off-line settling basin outfalls and rearing pond discharges during drawdown, limits for which are listed in Table 3. All limits represent maximum effluent limits, unless otherwise indicated, and the Permittee must comply with the applicable effluent limits in the tables at all times, unless otherwise indicated, regardless of the frequency of monitoring or reporting.

The proposed effluent limitations are identical to those of the previous General Permit, except for additional clarification about total residual chlorine limits. Chlorine limits only apply when chlorine or Chloramine-T is being used.

Table 2. Effluent Limitations for Hatchery Discharges (see GP for details)

Pollutant	Average Monthly Limit	Maximum Daily Limit	Instantaneous Maximum
Net **Total Suspended Solids**	5 mg/L	---	15 mg/L
Net **Settleable Solids**	0.1 ml/L	---	---
Total Residual Chlorine – into fresh water	9.0 µg/L	18.0 µg/L	---
Total Residual Chlorine – into marine water	6.1 µg/L	12.3 µg/L	---

The limits identified in Table 3 apply to any discharge to waters of the U.S. from an OLSB in addition to limitations listed in Table 2, above, for the total hatchery flow. These limits apply to raceways or pond systems during drawdown for fish release in lieu of the TSS and settleable solids limits in Table 2, above. The total residual chlorine limits set forth in Table 2, above, still apply to raceways or pond systems during drawdown for fish release.

Table 3. Effluent Limits for Discharges from Off-line Settling Basins and from Raceways or Rearing Ponds during Drawdown for Fish Release

Pollutant	Maximum Daily Limit
Total Suspended Solids	100 mg/L
Settleable Solids	1.0 ml/L

Rearing Vessel Disinfection Water: When rearing vessels are disinfected with chlorine, the total residual chlorine effluent limits in Table 2, above, apply (unless they are allowed to dry completely).

Effluent Monitoring

In addition to the monitoring requirements in the previous General Permit, the EPA proposes to require two years of continuous temperature monitoring for all facilities covered by this General Permit that discharge to water bodies impaired for temperature. This will ensure that the Permittee is collecting adequate data to assess compliance with the temperature water quality standards. Facilities that discharge to waters impaired for temperature will be required to monitor the effluent, as well as immediately upstream of the facility. The data collected via continuous temperature monitoring may also be used for development of WLAs in an applicable TMDL, or for ESA consultation.

Monitoring requirements in Table 4, below, must be performed before the effluent is discharged to the receiving water under the general permit.

Table 4. Hatchery Effluent Monitoring Requirements

Parameter	Units	Sample Type	Sample Frequency	Sample Location
Effluent Flow	Gallons per day	Flow meter, calibrated weir, or other approved	Monthly	Effluent
Net Total Suspended Solids	mg/L	Composite	Monthly	Influent & Effluent
Net Settleable Solid	ml/L	Grab	Monthly	Influent & Effluent
Total Residual Chlorine (including when Chloramine-T is in use)	µg/L	Grab	Monthly	Effluent
Temperature (facilities that discharge to waters impaired for temperature)	ºC	Meter	Continuous (2 years)	Upstream & Effluent

Discharges to waters of the U.S. from OLSBs must be monitored as required in Table 5, below.

Table 5. Off-Line Settling Basin Effluent Monitoring Requirements

Parameter	Units	Sample Type	Sample Frequency	Sample Location
Effluent Flow	Gallons per day	Flow meter, calibrated weir, or other approved method	Monthly	Effluent
Total Suspended Solids	mg/L	Grab	Monthly	Effluent
Settleable Solids	ml/L	Grab	Monthly	Effluent
Ammonia	mg/L	Grab	Quarterly	Effluent
Temperature	º C.	Meter	Weekly when OLSB is discharging	Effluent
pH	Standard Units	Meter	Quarterly	Effluent

Samples for rearing pond and raceway drawdowns for fish release must be collected regardless of amount of fish in the facility, per Table 6 requirements below.

Table 6. Monitoring Requirements for Discharges from Rearing Pond or Raceway Drawdowns for Fish Release

Parameter	Sample Point	Sampling Frequency	Type of Sample
Settleable Solids (mL/L)	Effluent	1/Drawdown	Grab
Total Suspended Solids (mg/L)	Effluent	1/Drawdown	Grab

Rearing vessel disinfection water that has been treated with chlorine must be tested before it is allowed to be discharged to waters of the United States, per Table 7 below.

Table 7. Monitoring Requirement for Discharges of Rearing Vessel Disinfection Water

Parameter	Sample Point	Sampling Frequency	Type of Sample
Total Residual Chlorine (mg/L)	Effluent	1/Discharge	Grab

Surface Water Monitoring

Permittees with off-line settling basins that discharge directly to surface waters must conduct surface water monitoring quarterly for ammonia, pH, and temperature immediately upstream, outside the influence of the discharge. All surface water samples must be grab samples and must be collected at approximately the same time as the effluent samples. All samples must be analyzed for the parameters listed in Table 7 to achieve minimum levels (MLs) that are equivalent to or less than those listed in Table 8. The Permittee may request different MLs if its results have consistently been above the required MLs. Such a request must be in writing and must be approved by the EPA before the Permittee may use the revised MLs. All surface water monitoring results must be submitted to the EPA with the DMRs for the month when the monitoring is conducted. The report must include all information required below in Table 8, and a summary and evaluation of the analytical results.

Table 8. Surface Water Monitoring Requirements

Parameter	Units
Ammonia Nitrogen as N	mg/L
pH	standard units
Temperature	^{o}C

Operational Requirements under the General Permit

- Raceways and ponds must be cleaned at such a frequency and in such a manner that minimizes accumulated solids discharged to waters of the U.S.
- Fish feeding must be conducted in such a manner as to minimize the discharge of unconsumed food.
- Fish grading, harvesting, egg taking, and other activities within ponds or raceways must be conducted in such a way as to minimize the discharge of accumulated solids and blood wastes.
- Animal mortalities must be removed and disposed of on a regular basis to the greatest extent feasible.
- Water used in the rearing and holding units or hauling trucks that is disinfected with chlorine or other chemicals must be treated before it is discharged to waters of the U.S.
- Treatment equipment used to control the discharge of floating, suspended or submerged matter must be cleaned and maintained at a frequency sufficient to minimize overflow or bypass of the treatment unit by floating, suspended, or submerged matter; turbulent flow must be minimized to avoid entrainment of solids.
- Procedures must be implemented to prevent fish from entering quiescent zones, full-flow, and off-line settling basins. Fish that have entered quiescent zones or basins must be removed as soon as practicable.
- Procedures must be implemented to minimize the release of diseased fish from the facility.
- All drugs and pesticides must be used in accordance with applicable label directions (FIFRA or FDA), except under the following conditions, both of which must be reported to the EPA. Therapeuatic chemicals used sporadically in culture operations are summarized in Table 8.
- Participation in Investigational New Animal Drug (INAD) studies, using established protocols; or
- Extralabel drug use, as prescribed by a veterinarian.
- Procedures must be identified and implemented to collect, store, and dispose of wastes, such as biological wastes. Such wastes include fish mortalities and other processing solid wastes from aquaculture operations.
- Facilities must dispose of excess/unused disinfectants in a way that does not allow them to enter waters of the U.S.
- Facilities must implement procedures to eliminate the release of Polychlorinated Biphenyls (PCBs) from any known sources in the facility- including paint, caulk, or feed. If removing paint or caulk that was applied prior to 1980, refer to the EPA guidance (abatement steps 1-4) at http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/caulk/guide/guide-sect4a.htm. Any future application of paint or caulk must be below the allowable TSCA level of 50 ppm. Facilities must implement purchasing procedures that give preference for fish food that contains the lowest amount of PCBs that is economically and practically feasible.

Table 9. List of Chemicals Used at Fish Hatcheries in Washington to Which Fish Are Exposed During Hatchery Operations

Disinfectants	Anesthetics	Injectable Antibiotics	Medicated Feeds	Miscellaneous Use
Chloramine-T	MS-222	Azithromycin	Erythromycin	AquaNeat®
Chlorine	Sodium Chloride	Draxxin®	Florfenicol	Escalade®
Formalin		Erythromycin	Oxytetracycline	Landmark®
Hydrogen peroxide		Vibrio vaccine	Romet®	Pendulum®
Potassium permanganate			SLICE® (emamectin benzoate)	PolyAqua®
Povidone-iodine				Sodium thiosulfate
Virkon® Aquatic				

Action Area

The action area for this consultation encompasses an area 300 feet downstream of all facilities, and occupying a maximum of 25 percent of the width of the receiving water, where any effluent discharged will be reasonably certain to be at background.

Action Agency's Effects Determination

The U.S. EPA has determined that the proposed action may effect but is not likely to adversely affect threatened or endangered species managed under NMFS authorities in Table 9, nor is it likely to adversely modify their designated critical habitats.

Table 10. Federal Register notices for final rules that list threatened and endangered species, designate critical habitats, or apply protective regulations to listed species.

Species /ESU or DPS[1]	Listing Status Last Reaffirmed	Critical Habitat	Protective Regulations
Chinook salmon (*Oncorhynchus tshawytscha*)			
Puget Sound	T; 04/14/14; 79 FR 20802	09/02/05; 70 FR 52630	06//28/05; 70 FR 37160
Lower Columbia River	T; 08/15/11; 76 FR 50448	09/02/05; 70 FR 52630	06//28/05; 70 FR 37160
Upper Willamette River spring-run	T; 08/15/11; 76 FR 50448	09/02/05; 70 FR 52630	06//28/05; 70 FR 37160
Upper Columbia River spring-run	E; 08/15/11; 76 FR 50448	09/02/05; 70 FR 52630	ESA section 9 applies
Snake River spring/summer run	T; 08/15/11; 76 FR 50448	10/25/99; 64 FR 57399	06/28/05; 70 FR 37160
Snake River fall-run	T; 08/15/11; 76 FR 50448	12/28/93; 58 FR 68543	06/28/05; 70 FR 37160
Chum salmon *(O. keta*)			
Columbia River	T; 08/15/11; 76 FR 50448	09/02/05; 70 FR 52630	06/28/05; 70 FR 37160
Coho salmon (*O. kisutch*)			
Lower Columbia River	T; 08/15/11; 76 FR 50448	3/25/16; 81 FR 9251	06/28/05; 70 FR 37160
Sockeye salmon (*O. nerka*)			
Snake River	E; 08/15/11; 76 FR 50448	12/28/93; 58 FR 68543	ESA section 9 applies
Steelhead (*O. mykiss*)			
Puget Sound	T;04/14/14;79 FR 20802	02/24/16;81 FR 9251	09/25/08;73 FR 55451
Lower Columbia River	T; 08/15/11; 76 FR 50448	09/02/05; 70 FR 52630	06/28/05; 70 FR 37160

Species /ESU or DPS[1]	Listing Status Last Reaffirmed	Critical Habitat	Protective Regulations
Middle Columbia River	T; 08/15/11; 76 FR 50448	09/02/05; 70 FR 52630	06/28/05; 70 FR 37160
Upper Columbia River	T; 08/15/11; 76 FR 50448	09/02/05; 70 FR 52630	02/01/06; 71 FR 5178
Snake River Basin	T; 08/15/11; 76 FR 50448	09/02/05; 70 FR 52630	06/28/05; 70 FR 37160
Pacific eulachon (*Thaleichthys pacificus)*			
Southern DPS	T; 03/18/10; 75 FR 13012	10/20/11; 76 FR 65324	Not applicable
Puget Sound/Georgia Basin Rockfish (*Sebastes sp.)*			
Yelloweye rockfish (*S.ruberrimus*)	4/28/10 (75 FR 22276)	11/13/14 (79 FR 68041)	Not applicable
Canary rockfish (*S. pinniger*)	4/28/10 (75 FR 22276)	11/13/14 (79 FR 68041)	Not applicable
Bocaccio (*S. paucispinis*)	4/28/10 (75 FR 22276)	11/13/14 (79 FR 68041)	Not applicable
Killer Whale (*Orcinus orca*)			
Southern resident	3/14/14 (79 FR 20802)	11/29/06 (71 FR 69504)	ESA Section 9 applies

[1] "T" means listed as threatened under the ESA; ESU: evolutionarily significant unit; DPS: distinct population segment.

Consultation History

We received a request for consultation and a biological evaluation on December 21, 2015. The consultation was initiated on March 31, 2016, at the closure of the public comment period, as none of the comments received resulted in substantive changes in the permit language for which an analysis of effects to ESA-listed species was requested.

Endangered Species Act

Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

Aquaculture facilities may discharge a variety of pollutants attributed to: (1) feeds, directly or indirectly (feces), (2) residuals of drugs or chemicals used for maintenance or restoration of animal health, and (3) residuals of chemicals used for cleaning equipment or for maintaining or enhancing water quality conditions. Aquaculture facilities typically convey nutrients (nitrogen and phosphorus) and solids to receiving waters. These pollutants have the potential to contribute to a number of negative water quality impacts related to eutrophication – algal blooms, increased turbidity, low dissolved oxygen and associated stresses to stream biota, increased water treatment requirements for users downstream, changes in benthic fauna, and stimulation of harmful microbial activity. In addition, the potential discharge of chemical and drug residuals raises concerns for deleterious effects on biota, including ESA-listed salmonids residing in receiving streams where effluent is conveyed. To this latter point, the EPA queried hatchery managers or

staff at each of the facilities to define which treatment chemicals were occasionally used, the manner of their use, and the means by which they are disposed. Table 9 summarizes the known treatment and/or disinfectant chemicals used at these facilities.

Effects of exposure to agents for which discharge limits are authorized under the permit

Agents authorized for discharge under the permit include chlorine, settleable solids, suspended solids, ammonia and temperature. Chlorine is used in disinfecting hatchery equipment, raceways and ponds.

Effects from exposure to chemical agents used in hatchery operations.

As identified in their BA, the EPA notes that many chemicals are used in the course of normal hatchery operations, not all of which are discharged to receiving waters. Table 9 summarized the known treatment and/or disinfectant chemicals used at these facilities. The EPA has asserted, and we concur, that T&E species cannot be adversely affected by chemicals to which they are not exposed. Hence, chemicals used for water testing at many hatcheries (e.g., buffers, reagents, etc.) which are not conveyed to receiving waters offer no complete exposure pathway, and hence, no risk to T&E species. Thus, only those chemicals released in effluent to receiving waters supporting T&E species are evaluated here.

Injectable drugs, medicated feeds, and certain discontinued disinfectants, while identified in Table 9 as agents used in hatchery operations, represent insignificant risk to the T&E species identified in Table 8 for a variety of reasons.

- Therapeutic drugs injected at pharmacologically active, yet toxicologically insignificant doses are costly, and are (typically) injected into adult fish for broodstock maintenance and disease prevention at low doses (e.g, to prevent pre-spawn mortality), and are not released directly to the environment through effluent. Any metabolic breakdown products from these agents, including unmetabolized parent compound, that would be released as urine or feces, would be experienced by cohorts in hatchery tanks at much higher concentrations than that experienced in receiving waters—if they are released at all. If these agents were either directly toxic, or toxic as metabolic byproducts, those animals in direct concentrated exposure would demonstrate such adverse effects, which has not been experienced. Further, the extremely limited amounts of such compounds used, primarily because of their costs and low therapeutic doses required, supports the conclusion that effects of the injectable drugs identified in Table 9 introduced into receiving waterbodies is insignificant with regard to both the subject species of this consultation identified in Table 8.
- Medicated feeds are used sparingly in hatcheries, and at concentrations that are therapeutically beneficial, not harmful, to the intended recipients of the feed. Raceways, ponds and settling basins are cleaned regularly, and particulates and uneaten feed are settled in settling ponds before the waters are conveyed to receiving waters. While exposure to medicated feeds cannot be discounted completely, the trace amounts of medicated feed would be highly episodic, transitory, and limited in scope, hence, insignificant to those species identified in Table 8.

Of the 7 chemicals evaluated by the EPA, povidone-iodine is the only one that is not used in water that flows through the hatchery (process water). Instead, povidone-iodine is commonly used to treat eggs after fertilization and, less commonly, to disinfect small equipment such as nets and boots. Egg treatment is infrequent (relatively few days per year) and uses small quantities of povidone-iodine. For gear treatment, containers of povidone-iodine solution are occasionally made available in certain areas of the hatchery and used as needed. This solution degrades over time as it sits out and gets used. For both types of uses, spent solution is most often disposed of on land. Any povidone-iodine solution that enters surface waters is expected to have very low concentrations of potentially harmful chemicals (e.g., elemental iodine), and to become rapidly diluted near the point of discharge. For these reasons, effects to listed fish from exposure to povidone-iodine are expected to be insignificant.

Sodium chloride is used at three hatcheries. It is used to calm fish and reduce stress during handling or transport, and/or to treat external parasites. This latter purpose mimics a natural behavior of salmonids, whereby fish move between waters of differing salinities to rid themselves of external parasites. Hatchery use concentrations of sodium chloride are 2 to 3times above naturally-occurring concentrations in freshwaters, and volumes used are quite small compared to the total volume of water discharged by hatcheries. For these reasons, effects to salmonids associated with exposure to sodium chloride are expected to be insignificant.
For the remaining 5 chemicals, the EPA used the chronic no effect concentration (chronic NOEC) derived from surrogate species (usually species in the family Salmonidae) to assess effects of exposure to listed fish. The NOEC is defined as the highest concentration of a material in a standard laboratory toxicity test that has no statistically significant effect on the test organisms as compared with a control group. The EPA used standard procedures for estimating NOECs from other empirical data (such as acute LC50s, defined as the concentration necessary to kill 50 percent of exposed organisms). As such, effects from the remaining 5 chemicals in Table 9 are expected to be insignificant.

Effects Summary

Based on the analyses provided above, we consider the overall effects of the action authorized by the NPDES permit to be insignificant or discountable, and therefore concur with the EPA's determination that the effects of the proposed project "may affect, but are not likely to adversely affect" the species identified in Table 1.

Critical Habitat Determination

Columbia River Salmon and Steelhead

The NMFS reviews the status of critical habitat and proposed critical habitat affected by a proposed action by examining the condition and trends of primary biological features of critical habitat throughout the designated area. The PBFs are physical and biological features essential to the conservation of the ESU/DPS. The PBFs potentially found in the action area for the salmonids, listed in Table 1 include:

1. Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rock and boulders, side channels and undercut banks supporting juvenile and adult mobility and survival.

2. Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility, water quality and forage supporting juvenile development, and natural cover such as shade, submerged and overhanging large wood, log jams, etc.

The effects of the proposed action on the above PBFs are considered insignificant for the following reasons:

1. The effects on water quality from effluent discharged from the hatchery facilities, as discussed above in relation the species, are minor and the introduction of the hatchery effluent into receiving water bodies are of sufficiently low concentration that discharges will not impede migration, increase predation or alter any other physical aspects of the habitat that serve fish in their migration corridors.

2. The effluent discharged from hatchery facilities in this consultation will affect water quality, but only in a minor capacity, as concentrations of chemical and biological material will be so low as to yield no potential injury to exposed fish at any lifestage, and rapidly dispersed by the receiving water body, thus spawning and rearing PBFs will not be diminished. The discharges will not affect water quantity or floopdplain connectivity primarily because they do not alter existing operations at these facilities, and also because the volume of water entering the hatchery from the source does not change upon receipt of the NPDES permit. The effect to water quality is insufficient to alter the conditions for juvenile rearing in an adverse manner.

Therefore, NMFS concurs with the EPA's determination of "may affect, but not likely to adversely affect" critical habitat for salmon and steelhead listed and proposed critical habitat as detailed in Table 1.

Southern Distinct Population Segment Pacific Eulachon

The NMFS proposed critical habitat for eulachon on January 5, 2011 (76 FR 515), which identified those physical or biological features essential to the conservation of the species which require special management considerations or protection. The essential features for freshwater critical habitat in the action area include: (1) freshwater spawning and incubation sites with water flow, quality and temperature conditions and substrate supporting spawning and incubation; and (2) freshwater migration corridors free of obstruction and with water flow, quality and temperature conditions supporting larval and adult mobility, and with abundant prey items supporting larval feeding after the yolk sac is depleted.

The NMFS has analyzed the potential impacts of the project on the above essential physical and biological features and has determined that, just as with salmon and steelhead, the effects to PBFs of eulachon critical habitat will be insignificant for the following reasons.

1. Effluent discharged from hatchery facilities discussed in this consultation will not affect any features that support spawning, incubation, or other features in this PBF because concentrations of chemical and biological constituents in the discharge water are at low levels, and these will be rapidly dispersed by the receiving water body. Effects on water quality, as discussed above, are minor and will not impede migration or increase predation.

2. Effluent discharged from hatchery facilities in this consultation will not affect migration corridors, water flow, prey, or temperature or floopdplain connectivity because the discharge will not change existing hatchery facility operations, meaning that volume, velocity, sediment levels, and other features of migration habitat are not modified. Moreover, it will not affect water quality because the low concentrations of constituents in the discharge and the rapid dispersal in the receiving water body are such that adverse effects to foraging or other elements of this PBF are very unlikely to arise..

Therefore, NMFS concludes that the potential effects of the project are not likely to adversely affect proposed critical habitat of the Southern DPS Pacific eulachon.

Conclusion

Based on this analysis, NMFS concurs with the EPA that the proposed action is not likely to adversely affect the subject listed species and designated or proposed critical habitat.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by the USFWS or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

Under the MSA, this consultation is intended to promote the protection, conservation and enhancement of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR

600.10), and "adverse effect" means any impact which reduces either the quality or quantity of EFH (50 CFR 600.910(a). Adverse effects may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

NMFS determined the proposed action would adversely affect EFH through creating temporary, short-term effects to water quality. This effect is described in more detail above.

EFH Conservation Recommendations

The NMFS is not recommending any additional conservation measures because conservation measures proposed by the EPA as part of the proposed action are adequate to mitigate or offset the impact of the proposed action on EFH. Since NMFS is not providing conservation recommendations at this time, no 30-day response from the USFWS is required (MSA section 305(b)(4)(B)). This concludes consultation under the MSA.

Please direct questions regarding this letter to Bonnie Shorin at the Oregon-Washington Coastal Area Office, (360) 753-9578 or email Bonnie.shorin@noaa.gov.

Sincerely,

for Barry A. Thom
Regional Administrator

Cc: Catherine Gockel, EPA

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